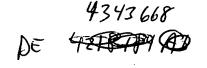
Avtec-502 Rowen

Claims

I claim:

- 1 1. A flame-retarding and smoke-suppressing article of manufacture comprising, by
- 2 weight:
- a cloth fabric 33.0 to 1400.0 grams per square meter;
- an adhesive binder 12.0 to 1050.0 grams per square meter of the cloth fabric;
- 5 and
- an additive powder 120.0 to 6250.0 grams per square meter of the cloth
- 7 fabric, the additive powder further comprising, by weight:
- 8 a phosphate-based catalyst 30.0 to 41.0%; malannia
- 9 a carbonific 22.0 to 29.0%;
- 10 a blowing agent 15.5 to 17.5%;
- a cementitious inorganic binder 21.0 to 25.0; and
- 12 a ceramic 2.50 to 5.00.
 - 2. The article of manufacture of claim 1 wherein the phosphate-based catalyst is
- 2 selected from the group consisting of ammonium polyphosphate, tris(beta-
- 3 chloroethyl) phosphate, guanidine phosphate, urea phosphate, melamine
- 4 phosphate, monoammonium phosphate, diammonium phosphate and mixtures
- 5 thereof.
- 1 3. The article of manufacture of claim 1 wherein the carbonific is selected from the
- 2 group consisting of dipentaerythritol, tridipentaerythritol, pentaerythritol,
- 3 pentaerythritol polyurethane, phenol, triethylene glycol, resorcinol, inositol,
- 4 sorbitol, dextrin, and starch.



- 4. The article of manufacture of claim 1 wherein the blowing agent is selected from
- 2 the group consisting of urea, butyl urea, benzene sulfonyl-hydrazide, melamine,
- 3 chloroparaffin, guanidine, glycine, and secondary carbonifics.
- 5. The article of manufacture of claim 4 wherein the secondary carbonifics include
- 2 chlorine containing material.
- 6. The article of manufacture of claim 5 wherein the chlorine containing material is
- 2 selected from the group consisting of a chlorinated paraffin, and a mixture of a
- 3 chlorinated paraffin containing about 70%, by weight, of chlorine and a chlorinated
- 4 paraffin containing about 40% by weight, of chlorine, with a weight ratio of 70%
- 5 chlorinated paraffin to 40% chlorinated paraffin is about 2:1.
- 7. The article of manufacture of claim 1 wherein the cementitious inorganic binder
- 2 includes calcium aluminate cement and silica flour.
- 1 8. The article of manufacture of claim 1 wherein the ceramic is selected from the
- 2 group consisting of ceramic spheres, and silica spheres.
- 9. The article of manufacture of claim 8 wherein the spheres are in a range of 10 to
- 2 500 micron in diameter.
- 1 10. The article of manufacture of claim 1 wherein the adhesive binder is a resin.

- 1 11. The article of manufacture of claim 10 wherein the resin is selected from the
- 2 group of styrenic, olefinic, acrylic, cellulosic, polyester, phenolic, rosin, shellfish
- 3 resin, polyamide, an aliphatic adhesive binding compound, and an aromatic
- 4 organic adhesive binding compound.
- 1 12. The article of manufacture of claim 10 wherein the resin is a thermoset resin.
- 1 13. The article of manufacture of claim 10 wherein the resin is a curable resin.
- 1 14. The article of manufacture of claim 10 wherein the resin is a thermoplastic.
- 1 15. The article of manufacture of claim 1 wherein the cloth fabric is selected from
- 2 the group of woven glass rovings, woven yarns, veils, cloths, surfacing mattes,
- 3 non-woven fabric, woven fabrics, knitted fabrics, all glass fabrics, all carbon
- 4 fabrics, Kevlar fabrics, ceramic fabrics, Nomex fabrics, basalt fabrics, and air
- 5 texturized fabrics.
- 1 16. The article of manufacture of claim 1 wherein the additive powder forms an
- 2 external fire-retarding layer on the cloth fabric and the adhesive resin forms a
- 3 reinforced layer on the cloth fabric.
- 1 17. The article of manufacture of claim 1 wherein the additive powder is in a form
- 2 of an aqueous slurry applied to the cloth fabric.
- 1 18. The article of manufacture of claim 1 wherein the additive powder is in a form
- 2 of an aqueous slurry applied to the cloth fabric by dipping.



- 1 19. The article of manufacture of claim 1 wherein the additive powder is in a form
- of an aqueous slurry applied to the cloth fabric by roll coating.

Cost

- 20. The article of manufacture of claim 1 wherein the additive powder is in a form
- 2 of an aqueous slurry applied the cloth fabric by a knife-over fabric coater.

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